

## Claims

1. A method for diagnosis of a sensor in a motor  
5 vehicle having an internal combustion engine, wherein during  
operation of the motor vehicle, an output signal of the  
sensor is monitored for whether a maximum value of the output  
signal undershoots a first threshold value and/or a minimum  
10 value of the output signal overshoots a second threshold  
value, and in that case a signal is forwarded to a controller  
that signals to the controller that the sensor, upon  
restarting of the motor vehicle, might be furnishing  
incorrect data.

15 2. The method as recited in claim 1, characterized in  
that the first threshold value is equal to the second  
threshold value.

3. The method as recited in claim 1, characterized in  
20 that in the event of undershooting or overshooting of the  
threshold values, the output signals of the sensor upon  
restarting of the motor vehicle are initially not used for  
the control and/or regulation of the motor vehicle.

25 4. The method as recited in claim 3, characterized in  
that the sensor is not used again for the control and/or  
regulation of the motor vehicle until calibration of the  
sensor has been done.

30 5. The method as recited in claim 4, characterized in  
that the calibration is done by learning minimum and maximum  
output values of the sensor.

6. The method as recited in claim 1, characterized in

that the signal in the controller is stored in a nonvolatile memory so that the signal will be directly available upon restarting of the engine.

5           7. The method as recited in claim 1, characterized in that the sensor is a phase sensor on a camshaft of the engine.

10           8. The method as recited in claims 3 and 7, characterized in that starting of the engine in emergency operation is done without using the phase sensor.

15           9. The method as recited in claim 1 or 2, characterized in that the threshold values are stored in a permanent memory of the sensor.

20           10. The method as recited in claim 9, that by means of a calibration of the sensor, the threshold values are adapted.

25           11. The method as recited in claim 1, characterized in that the forwarding of the signal is done in encoded form.

            12. A sensor having means for performing the method of claim 1.